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ABSTRACT

A discussion is presented on the essential need for removing mobility barriers in public recreational areas as well as other sites. It is pointed out that physical disability is not limited to those confined to wheelchairs, but includes persons with temporary or lesser physical handicaps such as limb casts, canes, poor vision, deafness, or the natural loss of flexibility in the aged. Examples of potentially dangerous architectural design in buildings are described, and recommendations are made for specific improvement in the design of parks, playgrounds, and other recreational areas. (JD)

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The Elimination of Mobility Barriers in Recreational Areas and Facilities

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A philosophical, moral and legal foundation for the removal of architectural barriers must be made before the question of a barrier free environment can be fully understood.

Architecturally, a mobility barrier is a condition in the physical environment that restricts or prevents free interchange or movement by individuals attempting to use certain facilities.

The consequences of mobility barriers are not limited to those who suffer from chronic disabilities, but during some period of our lives we all will succumb to its effects. Flights of stairs, protruding thresholds, revolving doors, narrow entranceways: all combine to turn the man-made environment into a frustrating obstacle course for a majority of the world's citizens. The aged, mothers with prams, wheelchairs, pregnant women, people with chronic cardiac or pulmonary conditions, the person on cane or crutches, all are impeded, inconvenienced, and endangered by architectural barriers.[1]

Unfortunately, the question of accessibility is continually linked with concerns for the disabled population of this country, and is not considered a problem for the general public. The limitations imposed by mobility barriers have caused countless embarrassment for all of us regardless of our physical condition. How often in our daily lives have we had similar experiences but were never labeled handicapped because of our temporary incapacitation?

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[1]Hilleary, James F., "Barrier Free Design." Rehabilitation International, June, 1975; p. 4.

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The advocacy of particular design specifications for any one segment of our society is not intended. Rather, a clear understanding of the need to adapt present and future structures to serve clientele which utilize them will result. These needs can be best served if those in control of public and private facilities modify certain traditional designs allowing a barrier free environment for all. Such modifications can increase the independence of disabled persons by relieving them of dependencies on family, community, and public agencies.

As a humanistically oriented profession, recreational services must recognize its obligations of making its resources available to the total population. The disabled person is frequently ignored in most communities when it comes to recreational activities. It is estimated that 83% of the disabilities affecting our society have resulted from disease, war, or old age, only 17% are born with such conditions.

Other contributing factors that have added to the condition of having more disabled persons around are that:

1. Drugs and operating techniques saved more veterans of our recent wars than was ever before possible.
2. Greater mobility has increased the percentage of accidents and injuries.
3. Population explosion has increased the numbers of the well and infirm.
4. Increase in leisure and leisure sports and activities has increased the percentage of accidents.
5. Better education and better medical assistance produces longer life with consequent disabling of chronic problems.[2]

Generally, handicapped people are considered to be only those individuals

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[2]Hilleary, James F. "Buildings for All to Use." AIA Journal, Vol. 51, March, 1969; p. 43.

confined to wheelchairs; however, this is a misconception. The American Standards Association lists the following basic categories of physical impairments:

1. Non-Ambulatory disabilities are those impairments that, regardless of cause, confine individuals to wheelchairs;
2. Semi-ambulatory disabilities are those impairments that cause individuals to walk with difficulty or insecurity; examples include those with cardiac and pulmonary ills, those who require the use of braces, crutches, or canes, as well as persons who are arthritics, amputees or spastics;
3. Incoordination disabilities include faulty coordination or palsy due to brain, or peripheral nerve injuries;
4. Aging disabilities are those manifestations of the aging process that significantly reduce mobility, flexibility, coordination, and/or perceptiveness;
5. Sight disabilities range from total blindness to impairments affecting sight so that the individuals functioning in public areas is insecure or exposed to danger;
6. Hearing disabilities include deafness or hearing problems which might make an individual insecure in public areas because he/she is unable to communicate or hear warning signals.

These broad categories include differing degrees of disability resulting in temporary or permanent impairment.

Is it just an ethical obligation to satisfy the needs of an increasing minority in our society today? According to legislation passed within the last 10 years, public agencies are mandated to accommodate the handicapped. Two public laws enumerate the rights of the handicapped. The Architectural Barriers Act of 1968 (PL 90-480) was instituted to ensure that certain buildings financed with federal funds are designed and constructed so as to be accessible to the physically handicapped. The Rehabilitation Act of 1973 prohibits discrimination against, and denial of, benefits to persons with handicapping conditions in any program or activity receiving federal financial assistance. The law also established the Architectural and Transportation Barrier Compliance Board to ensure compliance with the Architectural Barriers Act of 1968.

This Act stipulates that an agency which did not conform to the intent of the law, and was receiving federal support, could jeopardize all future grant aid and contracts. Thus, federal assistance of more than $2,500 requires that facilities be made accessible. Such investigations are up to the discretion of the Compliance Board and to date, have been lax. However, a recent "inspection of 314 federally funded buildings or building plans in 35 states, and the District of Columbia, found that the Architectural Barrier Act of 1968 had only minor effect on making public buildings barrier free."[3] It is unfortunate that the threat of non-compliance with the law and possible loss of economic support by the Federal Government had little or no effect on these public agencies.

In an effort to enforce present legislation dealing with the removal of architectural barriers, the Secretary of Health, Education, and Welfare, on April 28, 1977, issued the following regulation pursuant to Section 504 of the Rehabilitation Act of 1973: This regulation attacks the discrimination, the demeaning practices, and the injustices that have afflicted the nation's handicapped citizens. It reflects the recognition of the Congress that most handicapped persons can lead proud and productive lives, despite their disabilities. It will usher in a new era of equality for handicapped individuals in which unfair barriers to self-sufficiency and decent treatment will begin to fall before the force of law.

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[3]The Effectiveness of the Architectural Barriers Act of 1968 (Public Law 90-480). Hearings before the subcommittee on Investigations and Review of the Committee on Public Works & Transportation, House of Representatives, 94th Congress First Session, October 7 and 20, Washington, DC, 1975.

It is imperative that our profession be a forerunner in the elimination of mobility barriers. Recreational service agencies recieve increasing amounts of federal assistance, which obligates them to make their facilities accessible for the disabled. Extensive renovation of present recreational facilities is not necessary. Slight modifications can enhance the disabled person's opportunities to engage in activities in surroundings little different than those used by their peers.

The privilege of active involvement, and meaningful interation with the general population through recreational pursuits, should not be denied for any reason. The opportunity to enhance the rehabilitation of disabled individuals can be realized if integration and accessibility is achieved.

> Many physical, sensory, mental, and multiple conditions restrict individual mobility; rehabilitation often restores such mobility to these individuals. Physical movement is absolutely necessary in our society and it is at the core of every educational, vocational, recreational, and social opportunity available to the citizens of the United States.[4]

The ability to freely express one's self through unrestricted programs and activities can assist in the mainstreaming of most individuals. By neglecting this, "the person who cannot manipulate his surroundings often experiences confusion, frustration and negative feelings of self worth. Making the environment responsive may reduce or avoid these detrimental experiences."[5]

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[4]AAHPER, "Making Physical Education and Recreation Facilities Accessible to All: Planning, Designing, Adopting," Washington, DC: 1201 Sixteenth Street, N.W.; p. 3.

[5]Morgan, Michelle. "Beyond Disability. A Broader Definition of Architectural Barriers." AIA Journal, May, 1976; p. 52.

The fundamental issue here is whether or not personnel, in the field of recreational services, are willing to accept the challenge of providing programs and activities for special populations. The goals of community recreational service, as stated by the Bureau of Education for the Handicapped Community Model Project, is to increase normal functions, and to satisfy the needs of the handicapped to their greatest potential through recreation. How can these impaired individuals assume any sense of normalacy in recreational activities, if mobility barriers prevent them from achieving this fundamental goal of a community recreational experience? Changes do not have to be extensive, and the costs are neglegible; as low as one half of one percent, if modifications are included in the original building design.

Pragmatic implementation of such designs in construction or renovation can be justified. In a research study released by the American Mutual Insurance Alliance, the advantages of accessible facilities are noted as follows:

1. Few accidents in buildings reduce losses and rates under health insurance policies.
2. Wide doors and ramps permit rapid evacuation since standards recommended for aiding handicapped persons also meet highest fire prevention standards.
3. Since buildings with aids for handicapped individuals have fewer hazards that result in accidents and liability claims, insurance rate reductions may be obtained on public liability policies when architectural barriers are removed.
4. Elimination of barriers also reduces changes of work connected accidents so that employers benefit through reduction in compensation insurance premiums.

Significant accessibility resulting from interior building modifications is not the total solution to increased participation by the disabled in recreational programming.

> When we perceive our man-made environment we must bear in mind that all forms of transportation, site elements, public spaces, and buildings are interconnected in a continuum of access and that the improvement of only one of these interdependent components does not insure accessibility.[6]

Recreational Service Departments must attempt to identify areas which restrict participants from entering recreational facilities. The modifications of areas and facilities for recreational use should utilize the same national standards as those implemented in hospitals, institutions, and some public buildings in conjunction with the Architectural Barriers Act of 1968.

What specific areas in the removal of mobility barriers should the recreationist recognize as restrictive and discouraging to impaired individuals for participation in activities? Consideration should be given tc the exterior environment immediately surrounding a building or facility. Parking accommodations and their location abutting the main entrance is most important. It is necessary to provide preferrential parking spaces in order to avoid a very long and ardous trip from the lot to the entry point. Parking areas for the disabled should be reserved only for those who feel that their disability warrants such use. These spaces shall be a minimum of 9 feet with a four foot allowance for a wheelchair transfer area provided between every two spaces. Parking spaces for the handicapped should be designed so that they are parallel to adjacent spaces.

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[6]Cotler, Stephen R. and Alfred H. DeGraff. Architectural Accessibility for the Disabled of College Campuses: State University Construction Fund: Albany: New York, 1976; p. 25.

Proper emplacement of signs to inform the general public and the handicapped of the accessibility of the facilities is very important. This can be accomplished by simply displaying the international symbol of access which is "composed of two elements--the wheelchair figure and either a square background or a square border." Provisions should be made to route the disabled over the most accessible and safest path to the structure by means of strategically located signs along the route. Pedestrian and vehicular traffic flow should be clearly deliniated to prevent accidents.

The familiar curb cut ramp, found in most communities, is useful, but it can be dangerous if not properly installed and maintained. The width of the curb cut should be three feet wide and have a textured surface by means of raised or abrasive strips to decrease the potential for slipping but not hindering wheelchair movement. Tactile and visual warning aids should be provided to assist the visually disabled as well as the sighted pedestrian that they are approaching a change in surface elevation.

The types of vegatation selected for park and recreational facilities can create problems for the disabled and the general public. One important factor often overlooked by many park maintenance departments is the periodical pruning of trees lining walks. This is extremely important for those with visual impairment. In addition to preventing pedestrian accidents resulting from low hanging limbs, it would be of great assistance to bicycle riders and joggers to have this safety hazard eliminated. It is recommended that these branches be pruned up to a height of 8'6" to prevent eye and facial injuries.

A continual problem in most areas having an abundance of shade trees lining the walkways is sidewalk damage resulting from shallow root systems which tend to create a nuisance.

Trees with extensive root systems, and those which continually drop debris, should not be planted near pedestrian walkways. Of concern are those trees that drop seed pods, cones, or fruit. The walkway itself, if a high intensity use area, should be at least six feet wide for ease of passage in both directions. This width will accommodate individuals in wheelchairs, crutches and/or braces, and enable them to pass each other without one having to leave the paved surface. One must also remember that the general populace will also be passing one another with strollers, baby carriages, toy wagons, and other paraphenialia. Structures such as benches, water fountains, and trash receptacles that jut into the general walking area create a hazard which should be avoided.

An in-depth look at surfaces for exterior walkways should be undertaken before construction begins. A determination must be made between soft, variable, and hard surfaces depending upon the needs of the area or facility.

The most obvious adaptation to the environment, so as to make areas and facilities accessible, is ramping. The importance of the ramping system for the disabled cannot be denied, but should be kept within proper perspective. Ramps are alternative routes for people who are not able to use stairs; however, they do not take the place of stairs since certain portions of the population find ramps more difficult to use. A major problem exists when the gradient exceeds 8.33% which results in an angle of incline that is too steep for a person in a wheelchair to negotiate safely. A general rule of thumb in ramp construction is that it should not exceed one foot of rise for each 12 feet of distance covered. Non-skid surfaces, handrails extending beyond the ramp itself, and a minimum width of three feet, are other considerations.

A primary entrance to buildings or facilities must be suitable for use by the disabled. Directing handicapped persons to the service entrance or freight elevator can no longer be tolerated.

The entry way should be a minimum of 34 inches; and preferably, 40 inches in width to allow unobstructed passage of wheelchairs. A level platform approximately five feet in front of the entrance and extending into the building will assist persons in wheelchairs to open the door without difficulty. Electronically operated doors which swing or slide open are desirable, but installation is expensive. Thresholds should be flush to the floor to avoid obstructing wheelchairs from making an easy entry to a facility.

Basic factors to be incorporated into the interior of a building are: low public telephones without booths, low drinking fountains, non-skid floors throughout, proper lighting and visual warning systems for those with hearing deficiencies. A public address system normally used in regular programming can also become a back-up emergency system for the blind as well as the general public.

Rest room facilities must be properly designed for usage by the handicapped. Undoubtedly, it must be most frustrating when a disabled person gains entry to a rest room and finds that he/she cannot use the facilities because of design limitations. To free this individual from embarrassment and discomfort, the following changes should be made in rest room design. First, it is important that the toilet stall be at least 3 feet by 5 feet with a door which provides for 34 inch clearance. Second, the door must swing outward to allow entry and sufficient turning radius for a wheelchair once inside the stall. Third, grab bars should be mounted on both sides of the stall. These minor modifications can be easily implemented in most public rest rooms.

Recreational activity facilities have been notorious for poor design in meeting the needs of the handicapped. The one exception to this has been the development of aquatic areas.

Pool areas have been modified to make their use more accessible for impaired persons, especially those in wheelchairs. Such innovations include ramps and steps into the water, grab bars on the sides of the pool for ease of entering and exiting water, high perimeter walls for wheelchair transfer, and wide non-skid surfaces around the pool. The most elaborate device thus far installed is a hydraulically controlled pool floor which can be raised to deck level to receive the disabled, and then lowered to a pre-determined water depth.

Development of neighboorhood playgrounds has been a vital part of most recreational service departments. It has not been until recently that accessibility to the play area and playground apparatus was questioned. The design of playground equipment has for the most part been dangerous to all children, and particularly detrimental to handicapped children in our society. Traditional playground equipment tends to be static in nature and ceases to excite the children after frequent use. Slides, swings, and monkey bars restrict the individual's use because of the rigid limitations of the equipment. Creative play apparatus, which enhances the child's imagination, is now being manufactured. Unfortunately, timber form designs, theme parks, and adventure playgrounds tend to exclude the disabled child.

Segregation of play areas based upon the individual's differing physical characteristics is not feasible nor desirable. The playground setting should help to increase the opportunities of the participants to socially interact with varied segments of the population with whom he/she have to deal in adult life. The play environment is an opportune time to instill a sense of concern for all human beings. A conscientious effort must be made to organize all community resources in an attempt to resolve the problem of architectural barriers.